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## An Enumeration of the Plants Collected by Dr. H. H. Rusby in South America, 1885-1886.—XI.

(Continued from page 12.)

*Myrcia guajavæfolia*, Berg, l. c. 160. Falls of Madeira (596).

*Myrcia phæoclada*, Berg, l. c. 167. Yungas, 6,000 ft. (599).

*Myrcia prunifolia*, DC. l. c. 253. Junction of the Beni and Madre de Dios (2693); Falls of Madeira (595), the latter specimens referred here with considerable doubt.

*Myrcia* sp. near *M. bimarginata*, Berg. Falls of the Madeira (603).

*Eugenia Michelii*, Lam. Encycl. iii. 203. Unduavi, 8,000 ft. (2082).

*Eugenia flavescens*, DC. Prodr. iii. 272. Falls of the Madeira (606).

*Eugenia Macahaensis*, Berg l. c. 589? Falls of the Madeira (588 and 593); Junction of the River Beni and Madre de Dios (597). Compared with Riedel's No. 353, Herb. Kew., and closely related if not identical.

*Eugenia Schlechtendahliana*, Berg, l. c. 321. Junction of the Rivers Beni and Madre de Dios (594).

*Engenia Gardneriana*, Berg, l. c. 316. Falls of the Madeira (604). Flowers smaller than in the type.

*Eugenia Feijoi*, Berg, l. c. 283. Falls of the Madeira (2664).

*Eugenia ovalis*, Berg, Linnæa, xxvii. 156? Falls of the Madeira (602). Apparently the same as Spruce's No. 5523. Specimens in leaf only.

*Eugenia Chequen* (Mol.), H. & A. Near Valparaiso, Chili (583).

*Eugenia spectabilis*, Phil. Linnæa, xxviii. 639. Same locality (584).

*Eugenia*, sp. Same locality. (601).

Nos. 591 from Falls of the Madeira and 589 from Junction of the Beni and Madre de Dios are probably *Eugenias*, but the specimens are indeterminable.

*Lecythis pachysepala*, Spruce in Mart. Fl. Bras. l. c. 494. Junction of the Rivers Beni and Madre de Dios (2528).

*Gustavia angusta*, L. Amoen. Acad. viii. 266. Falls of the Madeira (656).

*Gustavia Brasiliana*, DC. Prodr. l. c. 290. Junction of the Beni and Madre de Dios (657).

As the species of the order Myrtaceæ have been so exceedingly multiplied by Berg, and many of his descriptions are not represented in the Kew Herbarium, I was unable to distinguish any new species among the numerous specimens collected by Dr. Rusby.

## MELASTOMACEÆ.

*Acisanthera alsinæfolia* (DC.), Tri. Trans. Linn. Soc. xxviii. Falls of the Madeira, Brazil (2534).

*Pterolepis trichotoma* (Rottb.), Cogn. in Mart. Fl. Bras. xiv. (3) 261. Guanai, 2,000 ft. (2325).

*Tibouchina granulosa* (Desr.), Cogn. Mapiri, 5,000 ft. (2247). var. ANGUSTIFOLIA, var. nov. Folia anguste oblonga, 8 cm. longa 2 cm. lata, acuta; petiolis 1 cm. longis. Yungas, 6,000 ft. (2245).

*Tibouchina barbigera* (Naud.), Baill. Adans. xii. 75. Guanai, 2,000 ft. (2326).

*Tibouchina longifolia* (Vahl), Baill. l. c. 74. Yungas, 6,000 ft. (2336; 2243); Guanai, 2,000 ft. (2244); Yungas, 4,000 ft. (2549), the latter determination from imperfect specimens and uncertain.

TIBOUCHINA PANICULARIS (Naud). (*Chætogastra paniculatis*, Naud. Ann. Sci. Nat. (III.) xiv. 129; *Pleroma paniculare*, Triana, Trans. Linn. Soc. xxviii. 46.) Yungas, 4,000 ft. (2327).

TIBOUCHINA CAPITATA (Naud.) Cogn. mss. (*Micranthella capitata*, Naud. l.c. xiii. 350; *Pleroma capitatum*, Triana, l. c.) Mapiri, 2,500 ft. (2727). Det. Cogniaux.

TIBOUCHINA LATIFOLIA (Naud.) (*Micranthella latifolia*, Naud. l. c. 351; *Pleroma latifolium*, Triana, l. c. 47). Yungas, 4,000 ft. (2337); 6,000 ft. (2338).

TIBOUCHINA RUSBYI, Cogn. sp. nov. (sect. *Dictanthera*): ramis junioribus petiolis pedunculis calycibusque brevissime et densiuscule hirtellis; foliis breviter petiolatis, oblongis, basi

rotundatis, apice acutis, integerrimis, 7-nerviis utrinque brevissime dense molliterque villosis; paniculis magnis, terminalibus, pyramidatis, multifloris, inferne foliatis; floribus breviuscule pedicellatis; calycis tubo ovoidea lobis triangulari-lanceolatis, obtusiusculis, tubo paulo brevioribus, staminibus valde inæqualibus, filamentis glabris, majorum connectivo basi breviter producto; stylo glabro.

Rami satis graciles, obtuse tetragoni. Petiolus 1-1½ cm. longus. Folia submembranacea, 7-10 cm. longa, 3-4 cm. lata. Pedicelli graciles, ½-1 cm. longi, minute bracteolati. Calycis tubus 5 mm. longus; lobi 3-4 mm. longi. Petala anguste obovata, brevissime ciliata, 8 mm. longa. Staminum filamenta 3-4 mm. longa; antheræ satis arcuatæ, majores 6 mm. minores 3-4 mm. longæ. Stylus filiformis, 10-12 mm. longus. Unduavi, 8,000 ft. (2339).

TIBOUCHINA BRITTONIANA, Cogn. sp. nov. (sect. *Dictanthera*); ramis junioribus pedunculisque brevissime denseque hirtellis; foliis parvis, breviter petiolatis, anguste ovatis, basi rotundatis, apice obtusis, integerrimis, 5-nerviis, supra brevissime denseque strigillosis, subtus brevissime denseque villosis; paniculis majusculis, terminalibus, multifloris, inferne foliatis; floribus longiuscule pedicellatis; calyce brevissime denseque adpresse hirtello, tubo ovoideo, lobis lanceolato-linearibus, acutis, tubo paulo brevioribus; staminibus satis inæqualibus, filamentis glabris, majorum connectivo basi breviuscule producto; stylo glabro.

Rami satis graciles obscure tetragoni, ferruginei. Petiolus 5-8 mm. longus. Folia rigida, cinerea, 2-3½ cm. longa, 8-14 mm. lata. Pedicelli graciles, ½-1 cm. longi, minute bibracteolati. Calycis tubus 5-6 mm. longus; lobi 3 mm. longi. Petala obovata, tenuissime ciliata, 8-9 mm. longa. Staminum filamenta 4 vel 5 mm. longa; antheræ satis arcuatæ, 6 vel 8 mm. longæ. Stylus filiformis, 12-14 mm. longus. Yungas 4,000 ft. (2341).

TIBOUCHINA LANCEOLATA Cogn. sp. nov. (sect. *Dictanthera*); ramis acutiuscule tetragonis, junioribus pedunculis calycibusque setulis brevibus adpressis rigidiusculis sparse armatis; foliis subparvis, breviter petiolatis anguste lanceolatis, basi obtusiusculis, apice acutis, integerrimis, 5-nerviis, supra breviter sparseque adpresse strigillosis, subtus sparse adpressque hirtellis, paniculis brevissimis, paucifloris, floribus brevissime

pedicellatis; calycis tubo anguste campanulato, basi acuto, lobis triangularibus, acutis, tubo multo brevioribus; staminibus paulo inæqualibus, filamentis glabris, majorum connectivo breviter producto, stylo glabro.

Rami graciles, purpureo-fusci. Petiolus 2-5 mm. longus. Folia rigidiuscula, 3-6 cm. longa, 7-10 mm. lata. Pedicelli filiformes, basi minute bracteolati, 2-3 mm. longi. Calycis tubus cinereo-fuscus, 4 mm. longus; lobi brevissime ciliati, 1 mm. longi. Staminum filamenta capillaria, 3-4 mm. longa; antheræ subrectæ, 3-4 mm. longæ. Stylus filiformis, 5 mm. longus. Yungas, 4,000 ft. (2343).

TIBOUCHINA STENOPHYLLA Cogn. sp. nov. (sect. *Dictanthera*); ramis obscure tetragonis, junioribus petiolisque setulis longiusculis adpressis rigidiusculis basi tuberculatis sparse armatis; foliis subparvis, breviter petiolatis, anguste lanceolatis, basi subacutis, apice acutis, integerrimis, trinerviis, utrinque sparse adpresseque setulosis; paniculis brevissimis, paucifloris; floribus longiuscule pedicellatis; calyce setis brevibus patulis glandulosis sparse hirtello, tubo oblongo-campanulato, inferne attenuato, lobis triangularibus, acutis, tubo multo brevioribus; staminibus satis inæqualibus, filamentis glabris, majorum connectivo basi longiuscule producto; stylo glabro.

Rami graciles, fuscescentes. Petiolus 3-7 mm. longus. Folia tenuiter membranacea, 3-6 cm. longa, 5-8 mm. lata. Pedicelli filiformes, basi minute bibracteolati, 5-8 mm. longi. Calycis tubus cinereus, 4 mm. longus; lobi ciliati, 1 mm. longi. Staminum filamenta capillaria, 4 vel 5-6 mm. longa; antheræ leviter arcuatæ, 4 vel 6 mm. longæ. Stylus filiformis, 8-9 mm. longus. Capsula ovoidea, 5 mm. longa. Guanai, 2,000 ft. (2323).

TIBOUCHINA PURPURASCENS, Cogn. sp. nov. (sect. *Dictanthera*); ramis obscure tetragonis, junioribus petiolis foliis calycibusque pilis rigidiusculis patulis longiusculis subsparse hirtellis; foliis parvis, breviter petiolatis, lanceolatis, basi subrotundatis, apice acuminatis, obscure denticulato-crenulatis, trinerviis; floribus breviter pedicellatis, solitariis, vel subsolitariis; calycis tubo late campanulato, lobis ovato-triangularibus, apiculatis tubo dimidio brevioribus.

Fruticulus 3-4 dm. altus, ramis gracilibus. Petiolus 2-4 mm. longus. Folia tenuiter membranacea, dilute purpureo-

violacea præcipue subtus, 2-4 cm. longa, 6-11 mm. lata. Pedicelli 2-3 mm. longi, ebracteolati. Calyx purpurascens, tubo 4 mm. longo, lobis rigidiusculis, 2 mm. longis. Mapiri, 2,500 ft. (2616).

TIBOUCHINA: sect. nov. OCTOMERIS, Cogn.

Flores 8-meri, pedicellis supra medium bibracteatis. Calycis segmenta persistentia. Antheræ lineares, superne satis attenuatæ, connectivo basi paulo incrassato.

TIBOUCHINA OCTOPETALA, Cogn. sp. nov. (sect. *Octomeris*); ramis junioribus petiolis pedunculisque breviter denseque hirsutis; foliis longiuscule petiolatis, ovato-oblongis, basi rotundatis, apice acutis, integerrimis, 7-nerviis nervis intermediis basi coalitis, supra dense strigoso-hirsutis, subtus breviter denseque villosis; paniculis terminalibus axillaribusque, paucifloris; floribus longiuscule pedicellatis; bracteis subpellucidis, sessilibus, obovato-cuneatis, extus densiuscule breviterque villosis, intus glabris; calyce subadpresse longiuscule denseque striguloso-setoso, tubo subhemisphærico, lobis lanceolato-linearibus, tubum subæquantibus; petalis brevissime ciliatis; staminibus satis inæqualibus, filamentis glabris, majorum connectivo infra loculos breviuscule producto; stylo inferne hirsuto.

Rami robustiusculi, obscure tetragoni, ferruginei. Petiolus 2-3 cm. longus. Folia submembranacea, 1-1½ dm. longa, 5-6 cm. lata. Paniculæ 6 cm. longæ; pedicelli 1-2 cm longi. Bracteæ purpurascentes, adpressæ, circiter 1 cm. longæ. Calyx purpurascens, tubo 8 mm. longo, 10 mm. lato, lobis 7-8 mm. longis. Petala purpureo-violacea, anguste obovata, 1½ cm. longa. Staminum filamenta 8 vel 10 mm. longa; antheræ majores satis arcuatæ purpurascentes 8 mm. longæ, minores subrectæ, flavæ, 6 mm. longæ. Stylus crassiusculus, 1 cm. longus. Yungas, 4,000 ft. (2332).

*Brachyotum microdon* (Naud.), Tri. l. c. 49. Unduavi, 8,000 ft. (2340).

*Aciotis paludosa* (Mart.), Tri. l. c. 51. Mapiri, 5,000 ft. (2333).

*Aciotis annua* (Mart.), Tri. l. c. 52. Falls of the Madeira (2582).

AXINÆA SPECIOSA, Britt. spec. nova. Arbor; foliis 15 cm. longis, 6 cm. latis, oblongis, coriaceis, utrinque acutis, glabris, 5-nervis, integris, supra opacis, subtus pallidis, nervis prominentibus; paniculis terminalibus, decompositis, 12 cm. longis, 10 cm. latis; ramis densifloris; floribus 4 cm. latis, pedicellis

15 mm. longis; calycis tubo 6 mm. diametro, hemispherico, 5-dentato; petalis obovatis, obtusis. Mapiri, 2,500 ft. (2328).

*Meriania macrophylla* (Benth.), Tri. l. c. 66. Yungas, 6,000 ft. (2329).

MERIANIA BOLIVIENSIS, Cogn. sp. nov. (sect. *Eumerianiæ*); ramis obscure tetragonis, junioribus, petiolis pedunculisque vix furfuraceis; foliis longiuscule petiolatis, anguste ovatis, basi subacutis, apice brevissime et obtusiuscule acuminatis, integerrimis vel vix undulato-denticulatis, 5-plinerviis, supra glaberrimis, subtus vix furfuraceis præcipue ad nervos; paniculis terminalibus axillaribusque, parvis, paucifloris, umbelliformibus; floribus breviuscule pedicellatis, calyce brevissime denseque puberulo, tubo teretiusculo, anguste campanulato, dentibus exterioribus linearibus, tubum æquantibus.

Rami satis graciles, pallide virides. Petiolus 2-2½ cm. longus. Folia tenuiter membranacea, 7-12 cm. longa, 4-6 cm. lata. Paniculæ 4-6 cm. longæ; pedicelli densiuscule puberuli, basi bracteati, 3-5 mm. longi. Bracteæ caducæ, lineares, densiuscule furfuraceo-puberulæ, 1 cm. longæ. Calyx cinereus, tubo 7-8 mm. longo, lobis interioribus ovatis, 3 mm. longis, dentibus exterioribus 6-7 mm. longis. Petala purpurascentia, obovata, 2 cm. longa. Antheræ 4-5 mm. longæ. Stylus filiformis, 10-12 mm. longus. Aff. *M. quintuplinervis* Naud. Yungas, 6,000 ft. (2246).

*Adelobotrys adscendens* (Sw.), Tri. l. c. 67. Mapiri, 5,000 ft. (2441).

*Græffenriedia emarginata* (R. & P.), Tri. l. c. 71. Mapiri, 2,500 ft. (2335). A form or variety with very lax inflorescence.

*Leandra crenata* (Don), Cogn. in Mart. Fl. Bras. xiv. (4) 137. Unduavi, 8,000 ft. (2306); Mapiri, 2,500 ft. (2307).

*Leandra aurea* (Cham.), Cogn. l. c. 140. Yungas, 6,000 ft. (2304; 2312).

*Leandra reversa* (DC.), Cogn. l. c. 198. Mapiri, 2,500 ft. (2302).

*Leandra dichotoma* (Don), Cogn. l. c. 200. Mapiri, 2,500 ft. (2235).

LEANDRA STELLULATA, Cogn. sp. nov. (sect. *Carassanæ*); ramis junioribus petiolis pedunculis foliisque subtus ad nervos pilis patulis breviusculis crispulis apice stellulato-ramosis dense vestitis; foliis longiuscule petiolatis, oblongis, basi subrotundatis, apice acutis, minute denticulatis ciliatisque, leviter 5-plinerviis, supra glabratis, subtus vix furfuraceo-puberulis; pani-

culis parvis, paucifloris, diffusis, floribus breviter pedicellatis; calyce leviter puberulo, tubo ovoideo, lobis triangularibus, acutis tubo 2-3 plo brevioribus; petalis anguste triangularibus, acuminatis.

Rami graciles, teretiusculi, cinerei. Petiolus 1½-3 cm. longus. Folia membranacea, in eodem jugo satis inæqualia, 6-12 cm. longa, 2½-5 cm. lata. Paniculæ 3-4 cm. longæ, pedicelli basi bracteolati, 2-4 mm. longi. Calycis tubus 2-2½ mm. longus; lobi circiter 1 mm. longi. Petala subreflexa, 1½ mm. longa. Stylus 2-3 mm. longus. Affinis *L. subseriata*, Cogn. Yungas, 6,000 ft. (2311*a*).

*Miconia spennerostachya*, Naud. l. c. xvi. 187. Guanai, 2,000 ft. (2278). Det. Cogniaux.

Var. ANGUSTIFOLIA, Cogn. Folia oblonga, breviuscule acutique acuminata, 12-18 cm. longa, 4-6 cm. lata. Mapiri, 5,000 ft. (2268).

MICONIA PERSICARIÆFOLIA, Cogn. sp. nov. (sect. *Eumiconia*, A. Aplostachyæ, Fl. Bras.); ramis teretiusculis, superne vix compressis, junioribus petiolis pedunculis calycibusque densiuscule stellato-furfuraceis; foliis breviter petiolatis, anguste lanceolatis, longe acuminatis, basi acutiuscule attenuatis, integerrimis, trinerviis, supra glabris, subtus ad nervos nervulosque densiuscule stellato-puberulis, cæteris glabratis; paniculis spiciformibus, brevibus; floribus sessilibus, glomerulatis, basi bracteolatis; calyce brevissime 5-lobato; antheris linearibus, subrectis, connectivo basi incrassato, antice minute biauriculato, postice gibboso; stylo apice truncato vix incrassato.

Rami satis graciles, cinerei. Petiolus 1-1½cm. longus. Folia membranacea, 8-14 cm. longa, 1-2 cm. lata. Pedunculus communis gracilis, 4-5 cm. longus. Calycis tubus cinereus anguste campanulatus, obscure angulatus, 3 mm. longus. Petala obovata, subacuta, 2 mm. longa. Staminum filamenta 2 mm. longa; antheræ pallidæ, 3 mm. longæ. Stylus filiformis 4 mm. longus.—Aff. *M. aplostachya*, DC. Guanai, 2,000′ ft. (992).

*Miconia albicans* (Sw.), Tri. l. c. 116. Yungas, 6,000 ft. (2299).

*Miconia stenostachya*, DC. Prodr. iii. 181. Yungas 6,000 ft. (2258).

*Miconia Organensis*, Gardn. in Hook. Lond. Journ. Bot. ii. 345. Falls of the Madeira (2281).

*Miconia tiliæfolia*, Naud. l. c. xvi. 151. Mapiri, 5,000 ft. (2322).

*Miconia argyrophylla*, DC. l. c. 181. Mapiri, 5,000 ft. (2248).

*Miconia lepidota*, DC. l. c. 180. Mapiri, 2,500 ft. (2253); 5,000 ft. (2271).

*Miconia*, near *M. rhytidophylla*, Naud. Yungas, 6,000 ft. (2269).

*Miconia sessilifolia*, Naud. l. c. 181. Yungas, 4,000 ft. (2270).

*Miconia desmantha*, Benth. Pl. Hartw. 181. Yungas, 4,000 ft. (2265).

*Miconia Ibaguensis* (Bonpl.), Tri. l. c. 110. Yungas, 6,000 ft. (2262; 2289); Guanai, 2,000 ft. (2277). The latter specimen det. Cogniaux.

*Miconia macrophylla* (Don). Tri. l. c. 103. Guanai, 2,000 ft. (2249).

*Miconia tomentosa*, Don. Mem. Wern. Soc. iv. 316. Junction of the Rivers Beni and Madre de Dios (2251).

*Miconia*, related to the last. Mapiri, 5,000 ft. (2248).

*Miconia calvescens*, DC. l. c. 185. Mapiri, 5,000 ft. (2264).

*Miconia prasina* (Sw.), DC. l. c. 188. Mapiri, 5,000 ft. (2257; 2267). A variable species.

MICONIA MULTIFLORA, Cogn. sp. nov. (sect. *Eumicomia*, F. Paniculares, Fl. Bras.); ramis superne valde compressis, junioribus petiolis paniculis calycibus foliisque subtus dense stellato-puberulis et ferrugineis; foliis longiuscule petiolatis, anguste obovatis, abrupte brevissime obtuseque acuminatis, basi late cuneatis, integerrimis, adjecto utroque nervulo marginali 5-nerviis, supra primum dense stellato-puberulis demum glabris; paniculis majusculis, thyrsoideis, ramosissimis, valde multifloris; floribus minute fasciculatis, sessilibus, ebracteolatis; calycis limbo obscure obtuseque 5-lobato; antheris linearibus, paulo arcuatis, connectivo basi brevissime producto et leviter incrassato, sparse glanduloso; stigmate subpeltato.

Rami robusti. Petiolus robustus, 3-4 cm. longus. Folia subcoriacea, supra pallide viridia, 2 dm. longa. 12 cm. lata, nervis nervulisque subtus valde prominentibus. Paniculæ 2½ dm. longæ. Calyx campanulatus, teretiusculus, 2½ mm. longus. Petala obovata, 2 mm. longa. Staminum filamenta capillaria, 1½ mm. longa; antheræ 2 mm. longæ. Stylus 4 mm. longus. Yungas, 4,000 ft. (2254).

*Miconia ternatifolia*, Tri. l. c. 118. Mapiri, 5,000 ft. (2255); Yungas, 4,000 ft. (2273).

*Miconia minutiflora* (Bonpl.), DC. l. c. 189. Mapiri, 5,000 ft. (2276; 2294).

# The Carices of the Upper Half of the Keweenaw Peninsula.

CAREX NOTES.—XIII.

By L. H. Bailey.

Mr. O. A. Farwell, Phœnix, Michigan, has sent me for determination a complete set of the carices which he has collected in his vicinity during the last four or five years, and the list affords so good a contribution to the knowledge of the geographical distribution of certain species, and is so large a record of the carex flora of a little known and interesting region, that I submit it for publication. Keweenaw County comprises the end of a small and narrow peninsula which juts into the main body of Lake Superior from the southward. It lies wholly above the 47th degree of latitude, and is the most northerly portion of the United States lying in or east of the Great Lakes. Its climate must be almost wholly dominated by Lake Superior. As in all regions adjacent to the Great Lakes, the flora is anomalous. It presents a curious admixture of northern and southern types, yet the northern types are not particularly marked. The writer has always observed this tendency of southern types to creep northwards along the Great Lakes, particularly on the shores opposite the direction of the prevailing winds. These winds, traversing the warmer area of the water, maintain the winter temperature on the shores upon which they blow at a higher point than it reaches upon the opposite side. Thus it appears to be true that the flora of the eastern shore of Lake Michigan has in it more plants of a southern type than has the western shore; at any rate, it is true that the western shore of the State of Michigan presents in its flora a warmer cast than does the eastern shore of the State. Mr. Farwell's plants come from the western side of the Keweenaw peninsula. It would be interesting to compare with them the plants of the eastern side.

The plants which seem to be particularly out of place so far north are *Carex squarrosa*, *C. virescens* var. *costata*, *C. Davisii*, and *C. Jamesii*. On the other hand, there are none which seem to be out of place so far south.

The range of *C. exilis* is much extended by the collection of this plant on the Keweenaw Penisula. The most western locality

heretofore known for it is in Wayne Co., Western New York, where it has been collected by E. L. Hankerson. Mr. Farwell writes: "I first collected it in 1884 in a swamp between the Osceola and Calumet mines in Houghton Co., about twelve or thirteen miles from here, where it was very plentiful. I collected it again about six miles northwest of here, in Keweenaw Co., in 1887." *C. exilis* is a rare species, and this extension of range is important.

This region, in common with our whole northern boundary apparently, presents the most perplexing similarities in some of the varities of *C. tribuloides*, *C. scoparia*, and *C. straminea*.

The list comprises sixty-four entries. Following each entry, I have inserted the number which it bears upon Mr. Farwell's label.

*C. pauciflora*, Lightf. 519.
*C. Michauxiana*, Bœckl. 664, 665. Frequent in meadows.
*C. intumescens*, Rudge. 614. Common.
*C. oligosperma*, Michx. 661. Frequent.
*C. utriculata*, Boott, 663, 663a, 663b, 714, 714b. Common.
*C. utriculata*, Boott, var. *minor*, Boott, 714a, 715, 715a.
*C. monile*, Tuckm. 662, 716, 716a, 716b.
*C. retrorsa*, Schw. 609, 689. Common.
*C. lurida*, Wahl. (*C. tentaculata*, Muhl.) 703. Frequent.
*C. hystricina*, Muhl. 634, 688.
*C. squarrosa*, Linn. 699. Frequent.
*C. scabrata*, Schw. 651. Common.
*C. Houghtonii*, Torr. 632, 633.
*C. filiformis*, Linn. 640. Frequent.
*C. fusca*, All. 615.
*C. stricta*, Lam. 569, 565a, 566, 566a, 566b, 566c. Frequent.
*C. stricta* × *filiformis*, Bailey, 613. The only station known for this well-marked hybrid.
*C. crinita*, Lam. 569, 568, 568a, 568b.
*C. Magellanica*, Lam. 608.
*C. limosa*, Linn. 606, 607.
*C. virescens*, Muhl. var. *costata*, Dewey, 697.
*C. castanea*, Wahl. 611.
*C. arctata*, Boott, 610.

*C. arctata*, Boott, var. *Faxoni*, Bailey, 639.
*C. arctata* × *flexilis*, Bailey, 612.
*C. debilis*, Michx. var. *Rudgei*, Bailey, 610a, 637, 638, 638a.
*C. gracillima*, Schw. 655. Common.
*C. gracillima*, Schw. var. *humilis*, Bailey, 656.
*C. Davisii*, Schw. & Torr. 700.
*C. Crawei*, Dewey, 701.
*C. granularis*, Muhl. 704.
*C. flava*, Linn. 670, 671, 672, 672a 673. Common.
*C. pallescens*, Linn. 570.
*C. laxiflora*, Lam. var. *varians*, Bailey, 657, 713. Common.
*C. Saltuensis*, Bailey, 243.
*C. aurea*, Nutt. 635, 636. Common.
*C. pedunculata*, Muhl. 41. Common.
*C. Pennsylvanica*, Lam. Common in sand.
*C. communis*, Bailey, 652, 652a.
*C. communis*, Bailey, var. *Wheeleri*, Bailey, 653.
*C. varia*, Muhl. (*C. Emmonsii*, Dewey), 40.
*C. deflexa*, Hornem. var. *media*, Bailey, 244. Bluffs.
*C. Jamesii*, Schw. 698. Infrequent.
*C. polytrichoides*, Muhl. 520. Common.
*C. stipata*, Muhl. 522. Common.
*C. vulpinoidea*, Michx. 521. Common.
*C. tenella*, Schk. 523.
*C. exilis*, Dewey, 389.
*C. echinata*, Murr. var. *cephalantha*, Bailey, 555.
*C. echinata*, Murr. var. *microstachys*, Bœckl. 556.
*C. canescens*, Linn. 604.
*C. canescens*, Linn. var. *vulgaris*, Bailey, 605. Frequent in swamps.
*C. canescens*, Linn. var. *alpicola*, Wahl. 625. Frequent on dry, sterile hills.
*C. canescens*, Linn. var. *polystachya*, Boott, 624.
*C. trisperma*, Dewey, 524.
*C. bromoides*, Schk. 702. Infrequent.
*C. Deweyana*, Schw. 603, 603a.
*C. tribuloides*, Wahl. var. *reducta*, Bailey, 685.
*C. tribuloides*, Wahl. var. *Bebbii*, Bailey, 684, 684a, 683c.

*C. tribuloides*, Wahl. var. *cristata*, Bailey, 683a.
*C. scoparia*, Schk. 601, 602a.
*C. scoparia*, Schk. var. *minor*, Boott, 602.
*C. straminea*, Willd. 683b.
*C. straminea*, Willd. var. *mirabilis*, Tuckm. 683.

## Pinus Banksiana at the West.

By E. J. Hill.

In the BULLETIN for November, 1889, are two articles on the presence of *Pinus Banksiana*, Lamb., on the coast of Maine, and the impression left by reading the article is, that this station is farther south than any yet reported. In "Garden and Forest" for December 4th, the statement is repeated. A record of a more southern locality is made in Professor Sargent's "Report on the Forests of North America," in one of the volumes of the tenth census, and is quoted in one of the articles. But it is evidently misunderstood, and may be slightly misleading to a casual reader. It is reported as found on "the southern shore of Lake Michigan." This may be taken for a part of the southern peninsula of Michigan, which, in its northern part, extends eastward from Grand Traverse Bay, the lower end of Lake Michigan having an easterly trend for some distance. But if we substitute for this statement "shore of the south end of Lake Michigan," all liability to mistake is removed, and a locality is named considerably further south than that at Frenchman's Bay in Maine. Thinking a detailed account of the distribution of this pine may be of interest to botanists and worth recording, I have compiled this article from my notes and observations and from other available sources regarding its presence west of Lake Huron.

To begin with the locality nearest to Chicago, that at the south end of Lake Michigan, we have one in latitude 41° 35′, or nearly two hundred miles south of that in Maine, and the most southerly of any yet named, as far as I can learn. This is in the counties of Lake and Porter, Indiana. I know of no other localities where it could be expected to occur, unless it be the next two counties south, Newton and Jasper, where there is a similar region of barren sand hills near the marshes of the Kankakee River, and around the head waters of the Iroquois. This was

evidently the bed of a lake with its bordering dunes, when the land, now partly covered with the Jack Pine at the head of Lake Michigan, formed a part of the lake itself. The conditions are favorable to its growth, but I do not know of its presence there at this time.

The pine belt in northwestern Indiana begins at Whitings, on the Lake Shore and Michigan Southern Railway, eighteen miles east of its terminus in Chicago, or three miles east of the Illinois State line, and extends eastward for twenty miles, perhaps farther, to Michigan City, (though I have not traced it all the way), since it is reported by Professor Beal as present on the east side of Lake Michigan from Indiana northward. The region of sand becomes narrower as we go eastward, but it is favorable to the growth of this pine. The pine belt is from one to three miles wide, and *P. Banksiana* and *P. Strobus* both abound, the latter having a somewhat wider range. It is a region of sand ridges and shallow ponds and sloughs, once a part of the bed of Lake Michigan, and the conditions are suitable for the two pines to flourish side by side, the dryer and more barren places being taken by the Jack Pine, and the moister and more fertile by the White Pine, though this is not exclusively true of either. Sometimes a Jack Pine will be found a foot in diameter, and thirty to forty feet high, but they are usually much smaller, often mere shrubs, except in form, with fruiting branches a foot from the ground. They frequently form dense thickets, and are sometimes dug up and taken away by nurserymen to be used for hedges or windbreaks, being treated like Arbor Vitæ. Four other conifers are also found, the Red Cedar rarely, the White Cedar, *Thuja occidentalis*, more common,the common Juniper frequently, and a small swamp of Tamarack.

In Michigan I have found it from Manistee southward, as well as in several places north of this, where it is common, and within its general climatic range. Manistee has about the same latitude as Frenchman's Bay. In "Wheeler and Smith's Catalogue of the Plants of Michigan," it is said to come as far south in the western part of the State as Newaygo County, or nearly as far south as Muskegon. In the "Report of the Michigan Forestry Commission" for 1888, it is given a range from Indiana

northward. In the central part of the State, according to the above catalogue, it is first seen in the northern part of Clare County, or but little south of the latitude of Manistee, where "it is common in groves on sandy barrens." "In the southeast township of Missaukee County, along the west bank of the Muskegon River, occurs a barren terrace about five miles long by two wide, which is covered by groves of this pine in all stages of growth, from seedlings to fine shapely trees 50 to 60 feet in height, and 12 to 14 inches in diameter." This is essentially in the same latitude as the coast of Maine station. Winchell, in his "Catalogue of Michigan Plants," reports its presence at Sand Point, on the east side of Saginaw Bay, in latitude 43° 50′, and thence northward along Lake Huron. There are several localities for it in the northern part of the southern peninsula, and it is frequently met with in the northern peninsula. I have found it at Escanaba, in the Menominee iron region, at Marquette and westward along the railroads in the Marquette iron district, and on the Keweenaw Peninsula. Here it may be looked for in any barren district.

Coming to the west side of Lake Michigan, it is given a single station in Illinois. M. S. Bebb, of Rockford, Ill., reports it from Ogle County, in which Rockford is situated, or about latitude 42°. This station is quite isolated, seemingly quite far away from any yet given, unless they are found in central Wisconsin. On the west shore of Lake Michigan it does not grow as far south as on the east shore. This shore is much less sandy, the prevailing west winds forming the sand-dunes mostly on the east side of the lake. The farthest south where I can find any mention of it along the shore is Sheboygan, (latitude 43° 40′). This is about the same as that given for its locality on the west side of Lake Huron, at Sand Point. North and west of Green Bay we come into the regions where it prevails once more, as at Oconto and beyond. I have seen it very abundant and in dense groves at Pembine, Wis., and southward.

In Minnesota its range is extensive in the northeastern part. I have seen it along the railroad from Two Harbors on Lake Superior, to Tower, on Vermilion Lake. On dry hills about Tower it is less common than *P. resinosa*, nor does it occur as

often as *P. Strobus.* South of Duluth it is seen along the railroad towards St. Paul, which for a long distance passes through a very sandy country, drained by the St. Croix River. In the eastern part of the State it extends as far south as the junction of Snake River with the St. Croix, (latitude 45° 50′). In Upham's "Catalogue of the Flora of Minnesota," (1883), it is said to be "abundant on sandy land in the region of the Upper Mississippi and Crow Wing Rivers, from Brainard and Wadena northward." In the central part of the State it is found north of St. Cloud, and about the same distance south as on the St. Croix, at Brockway, in the north-eastern part of Stearns County, or a few miles north of St. Cloud. East of the Mississippi, it has its southernmost limit in Minnesota, at Princeton, in Mille Lacs County, in the same latitude as St. Cloud, (45° 33′).

Its general southern limit west of Lake Huron may, therefore, be placed at about 43° in Michigan, to 46° in Minnesota, whence after crossing the Mississippi, it extends northwesterly to the Saskatchewan. Aside from this are the southerly extension to the head of Lake Michigan, and the isolated station in northern Illinois.

## The New Edition of Gray's Manual.

*Manual of the Botany of the Northern United States, including the District east of the Mississippi and North of North Carolina and Tennessee, by Asa Gray. Sixth Edition, revised and extended westward to the 100th meridian.* Sereno Watson and John M. Coulter, assisted by specialists in certain groups. 8vo., pp. 760; 25 plates: New York, 1890.

By those, who, from the time of its appearance, have made constant use of Dr. Gray's Manual of 1867, this new and revised edition has been waited for with no small degree of interest. That it would come up fully to the wants and demands of the age and incorporate all the results of active investigation carried on since for almost a quarter of a century, was a reasonable expectation. That it has done so, cannot be truthfully said.

Viewed as a manual, or hand-book, designed not only for experienced botanists already in possession of its contents, but chiefly for the great mass of private students, and beginners and

learners in schools and colleges, the increase in bulk, caused by the extension of its area and scope, is a disappointment and a drawback. A narrower field, condensation and Linnæan brevity in description and larger print would have been far better, or else, a division into two volumes, or, perhaps, three.

But the book is marred by defects of a more serious character, and one of these relates to the geographical distribution of the rarer species. In a majority of cases their range is either incorrectly, or only partially indicated. The preface, tells us that "all known available sources of information have been made use of." If so, the word "available" must have a covert meaning. The following publications on the floras of New Jersey and Pennsylvania are, no doubt, in the botanical library at Cambridge: Britton's Catalogue of the Plants of N. J., 1881; Porter's Sketch of the Botany of Penn. (with map) in Walling and Gray's Topographical Atlas, 1872; Sargent's Forest Trees in Tenth Census Reports, 1884; Dudley's List of the Plants of the Lackawanna and Wyoming Valleys, Penn., 1887: Porter's List of the Carices of Penn., 1887—and various local catalogues and articles in the Botanical Gazette and the BULLETIN. Moreover, a multitude of plants from this very tabooed region are extant in the Harvard Herbarium, with labels, showing dates and places of collection, plants contributed during a long series of years and often accompanied by what Dr. Gray was wont to call "useful notes." Why these "sources of information" were not "available" may be guessed at. To prove gross neglect, to say the least, on the part of the revisers, corrections are here added for the range of sixty such species, and a like thing might be done for as many more.

*Jeffersonia diphylla*, Pers. "W. N. Y. to Wisc. and northward." From Central Pa. westward.

*Arabis perfoliata*, Lam. "From N. E. to Minn. and westward." It occurs in N. J. and E. Pa.

*Thelypodium pinnatifidum*, Wats. "O. to Minn." It should be W. Pa. and O. to Minn.

*Polanisia graveolens*, Raf. "Conn. and W. Vt. to Minn." Common along the shores of the Susquehanna down to Chesapeake Bay.

*Polygala polygama*, Walt. "Common." A plant of the eastern seaboard and rare in northern N. J.; not known in Pennsylvania.

*Stellaria borealis*, Bigel. "R. I. to Minn., and northward." N. N. J. and westward through N. Pa.

*Sida Napæa*, Cav. "Rocky banks along the Alleghanies, Penn. to Va., rare." The old manual gives one station on the Lower Susquehanna, Pa., and another on the Kanawha, W. Va.

*Ilex mollis*, Gray. "Burgoon's Gap, Blair Co., Pa., and southward along the Alleghanies." Common on the Pocono plateau, N. E. Pa.

*Ilex opaca*, Ait. "Me. to Va., near the coast." Cold Spring, Dauphin Co., Pa., and along New River above Kanawha Falls, W. Va.

*Robinia Pseudacacia*, L. "S. Penn." From Locust Ridge, Monroe Co., Pa., westward and southward along the Alleghanies.

*Æschynomene hispida*, Willd. "S. Penn." Yes, but from one station on the Delaware below Philadelphia and nowhere else.

*Prunus Alleghaniensis*, Porter. "Bluffs of the Alleghanies, Pa." It should read: From the barrens of Huntingdon Co., across the Alleghany Mtn. to Elk Co., Pa., frequent.

*Cratægus parvifolia*, Ait. "N. J. to Florida." Frequent in E. Penn.

*Saxifraga erosa*, Pursh. "Cold mountain brooks, Pa., southward along the Alleghanies."; Known from one station only in Pa., and that not in the Alleghanies, but near Bethlehem.

*Ribes lacustre*, Poir. "Nwf. to N. E. and W. to N. Y., &c." It ranges all through N. Penn.

*Hippuris vulgaris*, L. "N. Y. to Ky. and northward." Collected in 1871 at Spencer Pond, N. Maine.

*Sedum telephioides*, Mx. N. J. to Ga. and S. Ind." Unknown in N. J.; it has been found at one station in S. Penn., in Fulton County.

*Berula angustifolia*, Koch. "Throughout the U. S." If so abundant everywhere, it ought to have been picked up in the states south of the New York line.

*Erigenia bulbosa*, Nutt. "W. N. Y. to Md. and Tenn." Its eastern limit is on the Susquehanna, York Co., Pa.

*Triosteum angustifolium*, L. "Va. to Ill. and Mo. and Alab." The old Manual has "S. Pa." and is right, for it belongs to the southeastern part of the State

*Linnæa borealis*, Gron. "N. E. to N. J. and the mountains of Md." The mountains of N. Pa. should have been added.

*Aster Shortii*, Hook. "Cliffs and banks, O. to Ill. and southward." W. Pa. has been overlooked.

*Onosmodium Carolinianum*, DC. "W. N. Y. to Minn., south to Ga. and Texas." It occurs in Central and S. Penn

*Cnicus pumilus*, Torr. "Me. to Pa., near the coast." It grows all over Penn., as far west as the summit of the Alleghanies, and perhaps beyond.

*Hieracium Marianum*, Willd., var. *spathulatum*, Gray. "Two Top Mountain, Penn." The two stations for this rare and singular variety, which is probably a good species, should have been designated as they are set down in the Synoptical Flora.

*Buchnera Americana*, L. "W. N. Y. to Minn. and south." From the range thus marked no one would ever suspect that the species grows in S. E. Penn.

*Utricularia clandestina*, Nutt. "N. B. to N. E. and N. J., near the coast." Not uncommon in mountain-bogs in Central Penn.

*Aristolochia Sipho*, L'Hér. "Rich woods, Pa., to Ga." Discovered by Dr. Garber at a single point, near the Va. line, in S. W. Penn.

*Arceuthobium pusillum*, Peck. "N. N. Y.; Hanover, Conn." Lehigh Pond, Pocono Mt., N. E. Pa. (*Dudley*).

*Euphorbia commutata*, Engelm. "Md. to Fla." "Minn. to Mo." From the banks of the Susquehanna river, Penn. westward.

*Juniperus communis*, L. "Common." It may be so in N. E. and N. Y., but it is rare in E. Pa. and not reported west of the Susquehanna.

*Spiranthes Romanzoffiana*, Cham. "N. N. E. to Mich.; Norfolk, Conn.; Central N. Y." At Conneaut Lake and Presque Isle, W. Penn.

*Pogonia affinis*, Austin. "S. W. Conn., S. N. Y. and N. N. J." Water Gap, Berks Co. and Phila., Penn.

*Smilacina trifolia*, Desf. "Lab. to N. E. west to Mich. and Iowa. (Sib.)." It has been collected at several points in N. Penn.

*Veratrum viride*, Ait. "Common." Rare in the mountains of Pa.

*Juncus Smithii*, Eng. "Sphagnous swamps, Broad Mtn. and in Lebanon Co., Pa." Confined to one swamp on Broad Mtn., Schuylkill Co., Pa. A single dubious specimen was picked up along a railroad in Lebanon Co.

*Juncus pelocarpus*, E. Meyer, var. *subtilis*, Engelm. "Me. to Canada." Abundant on the shores of an island in Lake Hopatcong, N. J.

Common in the pine barrens

*Juncus asper*, Eng. "Sphagnous swamps, N. J." ~~Very~~ local; found in two such swamps, and in one of them now extinct.

*Potamogeton obtusifolius*, Mert. and Koch. "Can. and N. E. to W. N. Y. and Mich." The old Manual credits it to E. Penn., where it has been collected in several counties.

*Potamogeton Tuckermani*, Robbins. "White Mtns., N. H., N. Y. and N. J." In Eastern and Central Penn.

*Scirpus sylvaticus*, L. "E. Mass. to N.Y., rare." W. N. J. and E. Penn., not uncommon.

*Carex Magellanica*, Lam. "North of Penn." Pocono Mtn., Pa.

*Carex irrigua*, L. "North of Penn." N. N. J. and Pocono Mtn., Pa.

*Carex flava*, L. "N. E. to L. Sup." N. N. J. and W. Pa.

*Carex longirostris*, Torr. "N. E. to Neb." From N. J. westward through N. Pa.

*Zizania aquatica*, L. "Common." Along the seaboard and the Great Lakes, but where else?

*Oryzopsis asperifolia*, Mx. "N. N. E. to Wisc. and Minn." N. N. J. and westward through N. Pa.

*Sporobolus heterolepis*, Gray. "Conn. to N. Y. and Minn." In S. E. Pa.

*Poa sylvestris*, Gray. "W. N. Y. to Wisc. &c." In E. Pa., at several stations, and at one in N. J.

*Milium effusum*, L. "N. N. E. to Ill." In N. Pa.

*Avena striata*, Mx. "N. N. E., N. Y. and northwest." In N. Pa.

*Phragmites communis*, Trin. "Edges of ponds." Along the coast and the Great Lakes, but not elsewhere.

*Glyceria elongata*, Trin. "N. E. to Mich., Minn. &c., Roan Mtn., N. Car." Common in the mountains of Pa.

*Glyceria grandis*, Wats. N. E. to N. Y., Mich. and Minn." N. E. Pa., rather frequent.

*Lycopodium Selago*, L. "Mtn. tops, Me. to L. Sup. and N." Summit of the Blue Mtn., Del. Water Gap., Pa.

*Botrychium simplex*, Hitchcock. "Me. to N. Y., Minn. and N." Pocono Mtn., Pa.

*Pellæa gracilis*, Hook. "Mass. to Minn. and N." Sullivan Co., Pa. (*C. E. Smith*).

*Lygodium palmatum*, Sw. "Mass. to Va., Ky. and sparingly south." Abundant on the Pocono plateau, N. E. Pa.

*Equisetum littorale*, Kühlewein." Vt. and N. Y. and N." Common along the shores of the Susquehanna river, Pa., down to Chesapeake Bay

*Equisetum variegatum*, Schleich. "N. H. and Niagara." Presque Isle, Erie Pa.

On the other hand, a few species are credited to N. J. and Pa., whose existence within their borders is open to challenge. Some years ago a list of twenty such was sent to a botanical friend in Cambridge, who carefully examined the Harvard Herbarium, without meeting one of them represented by a specimen from these States.

Another manifest defect is the inaccurate designation of adventive and naturalized species. That an introduced plant might not behave in the same way in all parts of the vast territory so diverse in soil and climate does not seem to have been apprehended. Over a whole state or several states, or, under favorable circumstances, even at a single station, some may take hold and become established, and in the rest of the territory be either unknown, or very precarious in their tenure. Both these things deserve to be noted. And yet, it can be easily shown that not one, or two, but a considerable number, marked as adventives in this new Manual, are thoroughly naturalized in extensive districts outside of New England.

A competent and impartial judge, however, must acknowledge that the book is beautifully printed and remarkably free from typographical mistakes, and that it has cost a large amount of steady labor and contains much that will be prized by advanced students, but, on close examination, they will be forced to ask questions like these:

Why have the *Coniferæ* been retained in their old place?

Why has Prof. Underwood's excellent elaboration of the *Hepaticæ* been appended, and the *Musci* passed by?

Why have older names of genera and species been restored in some cases, and not in others?

Why have good published species and varieties, known to the revisers, been excluded, and yet copious lists of real and supposed hybrids given?

Why have species and varieties been admitted whose claims are still doubtful?

Why have species seen by no American botanist, been inserted, solely on European authority and that not of the first order?

Why have names, clearly proved untenable, not been discarded—for example, *Gentiana alba*, Muhl., which is rightfully *G. flavida*, Gray?

It is a matter for regret that the new editors, with all the great resources at their command, and the advantages of their position, should have failed to come squarely up to the requirements of the age and the present level of botanical science in our own country. Had they done so, the book might have counted on the occupation of the field they profess to cover, for a generation to come, without fear of rivalry. As it is, the contents are of unequal value and not homogenous. They are marred here and there by inexcusable faults of omission and faults of commission, and betray the absence of one master-mind, which making "use of all known available information," would have shaped and moulded the different elements so as to have produced a proportionate and harmonious whole.

THOS. C. PORTER.

## CHARLES CHRISTOPHER PARRY.

Dr. Parry died at his home in Davenport, Iowa, on the morning of February 20th, after an illness of several weeks, pneumonia succeeding a violent attack of the influenza. Another of America's famous botanists is gone from us, one whose services in the elucidation of the flora of our country have been equalled by but few, and whose knowledge of the plants of the western part of the continent was probably exceeded by none.

A brief account of his life and labors is here given, with the certainty that they will be more fully and suitably recognized in another place.

Dr. Parry was born at Admington, Worcestershire, England, August 28th, 1823. He came to the United States in 1832, and spent the next years of his life with his father's family, on a farm in Washington County, New York. He was graduated from Union College, and subsequently received the degree of Doctor of Medicine. In 1846 the family moved to Davenport, Iowa, where he practiced his profession for several years. But he early developed a great fondness and aptitude for botany, and this soon became almost his sole occupation.

His earliest work in that science was done, indeed, about 1842, while in northeastern New York, and in 1847 a great impetus was given to it by his making the acquaintance of Dr. Torrey, and the formation of a friendship which was unbroken during his lifetime. The study of the Davenport flora occupied Dr. Parry's attention for several years. In 1848 he served on Dr. David Dale Owens' Geological Survey of the northwest, and from 1849 to 1852 he was one of the botanists of the Mexican Boundary Survey. In 1861 he made an extensive collecting tour to the Rocky Mountains, and first discovered many of the most interesting plants of that region; this exploration was continued in 1862 in company with Messrs. Hall and Harbour, and again in 1864. In 1867 he accompanied the Pacific Railroad Survey of the 35th Parallel. From 1869 to 1871 he was botanist of the United States Department of Agriculture, and stationed at Washington. In 1872 he again collected in the Rocky Mountain region. In 1873 he was attached to Captain W. A. Jones' Wyoming Expedition. The seasons of 1874 and 1875 were

spent in Utah, and of 1876 with Prof. J. G. Lemmon, in southern California, where a very large collection was accumulated. The season of 1878 was spent in the vicinity of San Luis Potosi, Mexico, and in Texas with Dr. Edward Palmer. Of recent years he has paid especial attention to the Californian flora, in close co-operation with Professor Greene.

Dr. Parry was for many years an active and energetic member of the Davenport Academy of Sciences, and was several times its President, and he was a correspondent of numerous other learned societies of America. He made several trips to his native land, and was well-known and esteemed by English and Continental botanists. He was essentially a field student, and the accuracy of his conclusions and observations is largely to be attributed to this fact. Indeed, the bulk and value of his collections, and the number of novelties discovered by him, has probably not been equalled in America. Some of these were published by himself, but the greater part by others, especially by Dr. Torrey, Dr. Engelman, Dr. Gray, Professor Greene, and Dr. Watson. The amount of his writings is not at all in proportion to his discoveries. Of late years he has been especially interested in the genera *Eriogonum*, *Chorizanthe*, *Ceanothus* and *Arctostaphylos*, on all of which he has written at length. He was the author of several lists of plants from the western country, and an occasional contributor to the BULLETIN and other scientific journals.

Personally Dr. Parry was a man of gentle, unassuming nature, and beloved by all who knew him. He was a close student, and continually at work on his chosen science. In the possession of a moderate income, he was enabled to gratify his tastes without need of other occupation. The tidings of his death will bring sincere grief to botanists at home and abroad. His work is commemorated in the genus *Parryella* and in a great number of species, *Primula Parryi* being one of the most elegant plants of its family.

N. L. BRITTON.

## Reviews of Foreign Literature.

*Ueber Anlage und Ausbildung von Libriformfäsern in Abhangigkeit von ausseren Verhaltnissen.*

This article, which is reviewed in the Botanische Centralblatt, appeared in the Botanische Zeitung some time ago. The question considered is, how far the origin and development of plant tissues are dependent on outward surroundings, particularly the changes which occur in the xylem, the origin and growth of the libriform and its accompanying cells. In other words, the author has tried to prove that the anatomical structure of the plant, as well as its morphological characteristics, depends largely on its environment.

The plants experimented upon were *Urtica dioica*, *Robinia Pseudacacia*, *Quercus sessiliflora* and *Ricinus communis*. Dwarf plants of *Urtica* were cultivated in small pots, others of the same species were grown in water in which were dissolved the salts adapted to them with the exception of phosphates. The results showed that the plants cultivated in pots with a comparatively small supply of water, developed a much larger libriform zone and a correspondingly smaller parenchymatic zone than those of the water culture. In order to prove that the lack of phosphates had nothing to do with this difference in the xylem, examples of *Robinia Pseudacacia* and *Quercus sessiliflora* were cultivated in water. Here it was found that the anatomical structure of the stem had been caused to approach that of the roots in several ways, namely, by a considerable lengthening of the elementary organs, by a lessening of the number of sclerenchymatic cells and a decrease in the thickness of their walls. It will be remembered here that the stem was kept for the most part under water.

The results of the experiments are summed up by the reviewer. First, the structure of the wood of the stem is not so constant, not so sure to be transmitted from one generation to the following, as has been hitherto supposed. If it is proven that through a long line of generations, the inner structure of the stem of any given species has remained constant, it can also be proven that the environment has remained about the same. When this is changed, then the anatomy of the stem changes. The plant, therefore, inherits only the ability to produce a certain series of

elementary organs. What is to be made of the cell cut off from the cambium, is determined by outward circumstances. The existence of a large variety of transitional forms among these elementary organs of the wood tissue is explained by this theory in a much more reasonable way than by any functional theory which can be suggested.

Just what these influences are which control the manner of growth, the author does not claim to know. By his experiments, however, he claims to have proven that water is a leading factor. As stem and root are accustomed to grow in different media, they therefore show a difference in their elementary organs. It must be possible to change the woody tissue of the stem to that of the root and *vice versa*. This latter possibility he claims to have verified.

The reviewer adds his own testimony to many of the conclusions drawn from the experiments described, having carried on similar experiments several years ago. A single sentence of the reviewer gives the key to the whole article. This translated as literally as possible is as follows: "The anatomical structure depends on the influence of outward circumstances, and is adapted to the causes at work during the life of the plant, but this adaptation does not necessarily involve the idea of function or purpose." E. L. G.

## Index to Recent American Botanical Literature.

*Abstammung der Platanen.* Johann Janko. (Bot. Jahrb. xi. 412-458, pl. IX. & X).

The important part which the American fossil representatives of the genus *Platanus* play in this investigation is admirably depicted by the author, in addition to which this article is a welcome contribution to general palæo-botany. The bibliography and table of synonomy for the fossil species is of great value and is deserving of special mention.

*Acalypha Virginica, Considerata in Ordine alla Diffusione nel Veronese.* A. Goiran. (Giorn. Bot. Ital. xxii. 134-136).

*Bald Cypress.—The Knees of the.* N. S. Shaler. (Garden and Forest, iii. 57).

A criticism of Dr. Lamborn's hypothesis, indexed in the last number of the BULLETIN.

*Botany at the A. A. A. S.* C. E. Bessey. (Am. Nat., xxiii, 816–819).

An abstract of the work accomplished at the Toronto meeting in Sec. F. of the Association, in the meetings of the Botanical Club and at the sessions of the Society for the Promotion of Agricultural Science.

*Cabomba aquatica.* J. D. H. (Bot. Mag. Tab. 7090).

*California Palms.* S. B. Parish. (Garden and Forest. iii., 5152).

*Casssine Domingensis, Spr.—Uber.* A. Garcke. (Engler's Bot. Jahrb. xi. 410, 411).

*Clintonia Andrewsiana.* J. G. Baker. (Bot. Mag., Tab. 7092).

*Disease of the Strawberry.—Another.* W. R. Dudley. (Bull. No. xiv., Agric. Exp. Sta., Cornell Univ., 182, 183, fig. 10).

The disease turns out to be due to *Ascochyta Fragariæ*, Sacc.

*Epigæa repens.—Double Flowers of the.* Kate E. Wilson. Bot. Gaz. xv. 19, 20).

In this communication the fact is noted that this plant occasionally produces double flowers. One locality near Plymouth, N. H., is specially mentioned as a habitat for the sport. As might be expected, the doubling of flower has resulted in important transformations of its parts.

*Filicineæ.—On the Affinities of the.* Douglas H. Campbell. (Bot. Gaz. xv. 1-7, with diagram).

The author here assumes the possibility of the Ophioglosseæ being a primitive stock with two main derivative branches: Marattiaceæ possibly terminating in Cycadaceæ, and Filices terminating in Marsiliaceæ and Salviniaceæ. The Hymenophyllaceæ are assumed to be a degenerate group whose exact point of departure from the Filices is problematic. The author desires fresh fruiting specimens of the Ophioglosseæ for study.

*Flora of Cap-a-L'Aigle.—Notes on the.* Robt. Campbell. (Can. Rec. Sci. iv. 54-68).

This excellent local catalogue unfortunately includes only those plants found in flower or fruit during the months of July and August. We trust that the author will extend his work so as to cover the entire flowering season.

*Flora of Milwaukee County, (First Supplement).* W. M. Wheeler. (Proc. Nat. His. Soc. Wisconsin, 1889, pp. 229-230).

Includes a list of 43 additions to Mr. Lapham's list of the Wisconsin Flora.

*Garden Vegetables.—The History of.* E. L. Sturtevant. (Am. Nat. xxiv. 30–48).

In this contribution the author describes Nasturtium, (*Tropæolum minus, T. majus, T. tuberosus*); New Zealand Spinach, (*Tetragonia expansa*); Nightshade, (*Solanum nigrum*); in regard to which he says * * * "and in the Mississippi valley the little black berries are made into pies and other pastry;" Okra, (*Hibiscus esculentus*); Olluco, (*Ullucus tuberosus*); Onion, (*Allium cepa*); Orach, (*Atriplex hortensis*); Oxalis, (*Oxalis crenata, O. Deppei*); Para cress, (*Spilanthes oleracea* and *S. fusca*); Parsley, (*Apium petroselinum,*) and Parsnip, (*Pastinaca sativa*).

*Kalenchæ carnea.* (Garden and Forest, iii. 52, fig. 14).

*Leo Lesquereux.* C. R. Barnes. (Bot. Gaz. xv. 16-19).

A biography with special reference to his work in bryology.

*Lily Disease in Bermuda—The.* A. L. Kean. (Bot. Gaz. xv. 8-14, Pl. I).

The disease here described and figured has caused considerable loss in the lily fields of Bermuda when it first made its appearance in 1885. The author concludes, from his experiments, that it is due to a species of *Botrytis*, identical with the one which has been described as growing upon *Lilium candidum* in England.

*Missouri Botanical Garden.—First Annual Report of the Director.* Wm. Trelease. (Pamph. 8vo., St. Louis, 1890).

To all who have not followed the work of this splendid institution, this little pamphlet is heartily recommended for perusal. It gives the history of its founding, work thus far accomplished, and projects for the future.

*Nettle Tree.—The.* (Garden and Forest, iii. 39, 42, fig. 7-13).

A well written and excellently illustrated article upon *Celtis occidentalis* and its various forms.

*Picea Breweriana.* (Garden and Forest, iii. 63, 64, figs. 15-16).

*Plants from Baja, California.* T. S. Brandegee. (Proc. Cal. Acad. Sci. (II.) ii. 217-232, eleven plates and a map; reprinted).

This is an enumeration with critical notes and descriptions of

new species of Mr. Brandegee's extensive collection of Lower Californian plants, made during the early part of last year, and of which Dr. Millspaugh's review of the Euphorbiaceæ was noted in the January BULLETIN. As was there indicated, the collection is exceedingly rich in novelties, new species and varieties being described by the collector in the following genera: *Lyrocarpa*, *Helianthemum*, *Polygala*, *Drymaria*, *Horsfordia*, *Sphæralcea*, *Bursera*, *Schœpfia*, *Hosackia*, *Dalea*, *Tephrosia*, *Æschynomene*, *Cæsalpinia*, *Hoffmannseggia*, *Lysiloma*, *Cotyledon*, *Lythrum*, *Œnothera*, *Lopezia*, *Cyclanthera*, *Mamillaria*, *Cereus*, *Opuntia*, *Aralia*, *Aplopappus*, *Psilactis*, *Franseria*, *Viguiera*, *Alfordia*, a new genus of Helianthoid Compositæ, *Encelia*, *Palafoxia*, *Vallesia*, *Gilia*, *Phacelia*, *Ipomœa*, *Cuscuta*, *Stemodia*, *Herpestis*, *Castilleia*, *Beloperone*, *Justicia*, *Lippia*, *Salvia*, *Boerhaavia*, *Atriplex*, *Eriogonum*, *Chorizanthe*, *Zephyranthes*, *Agave* and *Yucca*. The grasses were elaborated by Dr. Vasey, and new species found in *Cenchrus*, *Sporobolus* and *Diplachue*. The Pteridophyta, studied by Professor Eaton, number 13 species, of which one *Cheilanthes* is perhaps new. 14 Fungi are enumerated by Dr. Harkness, including a new *Puccinia*. Messrs. Coulter & Rose contribute description of a new species of *Arracacia*. Altogether this is a most important contribution to West American Botany. N. L. B.

*Plants from the Erian and Carboniferous, and on the Characters and Affinities and Palæozoic Gymnosperms.—On the.* J. W. Dawson. (Can. Rec. Sci. iv. 1-28, figs. 1-6).

*Dictyocardites Lacoi* is described and figured as a new genus and species. A figure of *Tylodendron* is given and *T. Baini* is described as new.

*Plants of Prospect Park.—The.* S. E. Jelliffe. (Reprint from Brooklyn Daily Eagle Almanac. Brooklyn, N. Y., 1890).

In this catalogue both native and introduced plants are enumerated. The Phanerogams number 286 and the Cryptogams 62. Amongst the latter are included 9 ferns, 18 mosses, 2 hepatics, 16 fungi, 11 lichens and 6 fresh water algæ. With the coöperation of the Park officials this excellent list could be made available for public use and instruction. A similar one is needed in every one of our large public parks.

*Pleurothallis ornata.* (Bot. Mag. Tab. 7094).

*Robinia Pseudacacia.—On the Chemical Constituents and Poisonous Principle of the Bark of.* F. B. Power and Jacob Cambier. (Pharm. Rundsch. viii. 29-38, illustrated).

*Seed-Wings of the Abietineæ.—A Preliminary Study of the.* G. N. Best. (Microscope, x. 1-6, pl. I).

Wing cells and seeds of *Pinus inops, P. pungens, P. monticola, P. rigida, P. Strobus, Tsuga Canadensis, Pseudotsuga Douglasii,* and *Picea Canadensis* are figured.

*Solanum Wendlandi.* (Garden, xxxvii. 104, 105, Pl. 738).

*Sphærella Fragariæ, Saccardo.* W. R. Dudley. (Bull. No. xiv, Agric. Exp. Sta. Cornell Univ. 171-182, figs. 1-9).

*Thrinax excelsa.* (Bot. Mag. Tab. 7088).

*Tigridia Pringlei.* J. G. Baker. (Bot. Mag. Tab. 7089).

*Umbelliferæ.—A New Genus of.* J. M. Coulter and J. N. Rose. (Bot. Gaz. xv. 15, 16, Pl. ii).

A description and figure of *Donnellsmithia Guatemalensis,* collected by John Donnell Smith in Guatemala, July, 1889. The authors conclude that the genus is most nearly related to *Eulophus.*

*Uredinial Parasites.* H. J. Webber. (Am. Nat. xxiv. 75, 76).

*Walnut Tree.—The Row Farm.* J. T. Rothrock. (Forest Leaves, ii. 133, 134, illustrated).

A description, with illustrations of tree and fruit, as an anomalous walnut, perhaps a hybrid between *Juglans nigra* and *J. regia,* at Lower Brandon, Va. The girth of the trunk is said to be more than thirty-one feet and a single branch on the south side of the tree extends to a distance of sixty-seven feet.

*Working of the Madison Lakes.—The.* Wm. Trelease. (Trans. Wis. Acad. Sci. Art. and Letters, vii. 121-129, pl. X).

A description of the vegetation included in the scum formed upon lakes Mendota and Monona. The appearance of this scum is often spoken of as the "working" of the lakes. A long list of citations in regard to the subject of "water bloom" is appended. The plate includes figures of *Anabæna Hassallii. A. circinalis, A.* (*Sphærozyga*) *flos-aquæ. A. Mendotæ, Lyngbya Wollei, Cœlosphaerium Kützingianum, Clathrocystis æruginosa,* and *Nostoc flos-aquæ.*

## Proceedings of the Club.

The regular meeting was held Tuesday evening, Feb. 11th, Dr. Newberry in the chair and twenty-five persons present.

Rev. Dr. Wendell Prime was elected a Corresponding Member.

The Editor read by title a paper on "Seedless Fruits," by Dr. E. Lewis Sturtevant, which will form No. 4 of the Memoirs.

The following paper was then read, as announced: "Notes on the Growth of the Cell-wall," by Miss Emily L. Gregory.

Mrs. Britton reported *Fissidens Ravenellii* as among a collection of mosses sent by Mr. Lighthipe from Florida.

Dr. Newberry exhibited photographs of fossil plants from the Cretaceous rocks of Kansas, remarking especially upon the recent discovery of *Cycadites*.

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The second February meeting was held at Barnard College, Wednesday evening, Feb. 26th, Mr. Hollick in the chair and twenty-one persons present.

Dr. Britton called the attention of the Club to the death of Dr. C. C. Parry, and remarked on his extensive and valuable work in North American Botany.

"The Flora of the Straits of Magellan," by Dr. Britton, the paper announced for the evening, then followed. It was illustrated by a collection of plants made in 1886, by Lieut. W. E. Safford, U. S. N. Among the specimens were *Ranunculus aberrans*, *Draba Saffordi* and *Vicia Saffordi*, new species named by Dr. Philippi. Especial attention was called to the large number of boreal species inhabiting southern South America.

Mr. Hollick reported *Anemone Hepatica* in full flower on Staten Island, Feb. 16,—the earliest record he has had for twenty years. Dr. Jelliffe stated that this *Anemone* and a *Viola*, probably *V. cucullata*, were gathered in the Richmond Hills woods, Long Island, January 15th.